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S/139/60/000/01/018/041

<sup>E192/E382</sup>  
 Distribution of the Potential, Field and Current-carrier Concentration  
 in the Region of Strong Fields in Alloyed p-n-junctions and pin-  
 structures

For this region, it is possible to write the following  
 expressions:

$$\left( \frac{dE}{dX} \right)_{X_p} = \frac{4\pi}{\epsilon} q(p - n + N)_{X_p} = 0 \quad (1.2)$$

$$E(X_p) = 0 \quad (1.3)$$

On the other hand, the boundary  $X = X_n$  of the space-charge region of the junction can be determined from:

$$(p - n + N_n)_{X_n} = \frac{\epsilon}{4\pi q} \left( \frac{dE}{dX} \right)_{X_n} = \frac{1}{2} N_n \quad (1.4)$$

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The potential at the point  $X = X_n$  can be evaluated from Eq (1.5) (Ref 6). The field at this point is given by Eq (1.6). The currents in the semiconductor can be expressed by Eqs (1.7) and (1.8). These can be normalised by introducing the notation adopted on p. 95; the formulae are then in the form of Eqs (1.9) and (1.10). The Poisson equation for the system is in the form of Eq (1.11). The boundary conditions for the space-charge region for Eqs (1.9) and (1.10) are defined by Eqs (1.12), while the continuity of the concentration at the alloying boundary is expressed by Eqs (1.13). By substituting these equations into the Poisson equation, the latter is in the form:

$$\frac{d^2\psi}{dx^2} = J_n - J_p + \frac{1}{N_{ne}} \frac{\psi - \psi_{Xn}}{x_n} - \frac{N_{ep}\psi}{p} + N \quad (1.16)$$

The first integral of this is in the form of Eq (1.17), where the integration constant  $C$  can be determined from Eqs (1.20) and (1.21). The distribution of the potential in the space-

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charge region can be found from Eq (1.17) in the form of an inverse function  $X(\Psi)$ ; the resulting formula is expressed by Eq (1.23), where  $N$  and  $C$  are defined from Eqs (1.11), (1.20) and (1.21). If a deficiency layer exists on both sides of the alloying boundary, the solution of the Poisson equation is in the form of Eq (2.1). The deficiency layer is contained within the interval  $\Psi_2 \leq \Psi \leq \Psi_1$ , where the boundaries  $\Psi_1$  and  $\Psi_2$  can be determined from Eqs (2.6) and (2.7). The final expressions for  $X$  are therefore in the form of Eqs (2.15), (2.16) or (2.17). The constants  $\Psi$  in these equations are defined by Eqs (2.6), (2.7), (1.20) and (1.21). On the basis of Eqs (2.15)-(2.17) and Eqs (1.14), (1.15) and (1.17), it is possible to evaluate  $\Psi$ ,  $E$ ,  $p$  and  $n$ . From the above it is found that the thickness of the space-charge layer in the p-region is given by Eq (3.1); the thickness of the inversion layer in the n-region is expressed by Eq(3.2); the thickness

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of the deficiency layer in the n-region is given by  
Eq (3.3) and the thickness of the space-charge layer  
in the vicinity of the boundary with the quasi-neutral  
region is expressed by Eq (3.4).

There are 7 references, 1 of which is English and 6  
are Soviet; 2 of the Soviet references are translated  
from English.

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M. Kirova  
(Tomsk Polytechnical Institute imeni S.M. Kirov)

SUBMITTED: April 7, 1959

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Card 5/5

RYABINKIN, Yu.S.

Electrical field in a semiconductor between transitions in the  
type of conductivity. Izv.vys.ucheb.zav.; fiz. no.2:140-147 '60.  
(MIRA 13:8)

1. Tomskiy politekhnicheskly institut im. S.M.Kirova.  
(Semiconductors)

S/139/60/000/03/004/045  
E140/E335

AUTHOR: Ryabinkin, Yu.S.

TITLE: Potential, Field and Carrier Concentration Distributions in a Strong Field Region of Fused p-n-junctions/and Pin Structures. II.

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,  
1960, Nr 3, pp 27 - 31 (USSR)

ABSTRACT: A continuation of the author's work (Ref 2), from which notation and principal results are taken (Part I. was published in the 1960, Nr 1 issue, pp 93-103). In this part the theory of pin structures is considered, taking into account hole and electron space charge and mobilities as functions of the field intensity. It is assumed that the injection levels are low with regard to the p and n regions, stated to be a negligible restriction in view of their high impurity levels. Acknowledgments are expressed to E.I. Androvich for directing this work. There are 1 figure, 2 tables and 2 references, 1 of which is Soviet and 1 English.

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S.M.Kirova  
(Tomsk Polytechnical Institute imeni S.M. Kirov)

SUBMITTED: April 7, 1959  
Card1/1

✓B

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SCV/109-5-2-25/26

AUTHOR: Ryabinkin, Yu. S.

TITLE: Coefficient of Transmission of a pin-Transistor  
(Brief Communication)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 2,  
pp 349-350 (USSR)

ABSTRACT: While the well known p-n-p (or n-p-n) type transistors possess mainly a diffusion mechanism of current transmission; the p-i-n type transistor operate mainly with field emission current. But at high frequencies diffusion may become important. The base transmission coefficient of germanium pin-transistors, considering diffusion and drift, is calculated below for the case of electron injection. Ignoring the influence of current and distortion in the narrow area of the base in limits (connected with the presence of inversion layers of

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Coefficient of Transmission of a pin-  
Transistor (Brief Communication)

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type p and n) the intensity of the electric field  $E$  can be considered constant in the whole layer of 1-type. Usually,  $E > 5 \times 10^3$  v/cm, and for this value the electron drift velocity in germanium  $S_n = \mu_n E = \text{const}$ , e.g., the mobility  $\mu_n \sim 1/E$ . An analogous dependence of the diffusion coefficient  $D_n(E)$  was not yet investigated. The author determines it with the aid of the distribution function of electrons by energies and taking the field  $f(\varepsilon, E)$  into consideration. The diffusion coefficient averaged through velocity and time of relaxation is  $D_n = V^2/3$ . In accordance with V. A.

Chuyenkov, (Zh T F, 1958, 28, 3, 470),  $\frac{3m_0}{m_e + m_h}$

and the following equation was established:

$$D_n(E) = \frac{\Gamma(1/2)}{3\Gamma(1/2)} \left( \frac{k_m}{k_{\text{atom}}} \right)^2 \left[ \frac{2e\hbar v_m}{3k_{\text{atom}}^2} \left( 1 + \frac{v_m}{c} \right)^2 \right]^{1/2} E^{-1/2} \approx 1.5 \cdot 10^{-2} E^{-1/2}$$

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Transistor (Brief Communication)

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For a given value of negative shift on the pin-structure,  $E = \text{const}$  and  $D_n = \text{const}$ . At this condition the solution of the continuity equations and current without considering recombination is:

$$\frac{\partial n}{\partial t} - \frac{1}{q} \frac{\partial j_n}{\partial x} = 0, \quad (2)$$

$$j_n = qnS_n + qD_n \frac{\partial n}{\partial x} \quad (3)$$

With reference to the works of E. Rittner and V. Shockley, the author gives the equation for the transmission coefficient:

$$\beta = \frac{j_n(\omega)}{j_n(0)} = \frac{Vb e^{\mu\omega}}{a \sin(\pi Vb) + Vb \cdot h(\pi Vb)} \quad (5)$$

For  $\omega \rightarrow 0 \beta \rightarrow 1$ , and for  $\omega \rightarrow \infty \beta \rightarrow 0$ , which indicates that at high frequencies the diffusion can markedly weaken the output signal. From (5) an equation for  $\beta$

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is developed, which after simplification is given as approximation:

$$|\beta| \approx \frac{2 \exp(\omega t)}{\sqrt{1 + 2 \frac{a}{R} \cos \varphi + \left(\frac{a}{R}\right)^2}}. \quad (5)$$

This solution is made for operation in absence of hole-injection, and the following relations are valid:

$$R = \sqrt{a^2 + (m D_n)^2}; \quad \varphi = \frac{1}{2} \arctg \frac{4 m D_n}{S_n^2}; \quad r = \omega R \sin \varphi; \quad t = \omega R \cos \varphi.$$

The above calculations are correct also for other transistors if  $S_n = \text{const}$  and  $D_n = \text{const}$ . For hole injection the solution is analogous. It follows from (5) that  $\beta = 1$  for  $\omega = 0$  and  $\beta \rightarrow 1$  for  $D_n \rightarrow 0$ ,  $D_n \rightarrow 0$ ,  $D_n \rightarrow \infty$  or for  $S_n \rightarrow \infty$ . For  $S_n \neq 0$  and finite magnitude of  $D_n$  with increase of frequency  $\beta \rightarrow 0$  as a result of the diffusional blurring of the signal. This effect becomes important when during

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the time of transit  $t_{tr} = \omega/S_n$ , the mean length of diffusion of the maxima of the harmonic modulated electron concentration  $L = 2 \sqrt{D_n t_{tr}}$  becomes comparable with  $\lambda/4 = \pi S_n/2\omega$  ( $\lambda$  = wavelength). The adjacent maxima merge and the amplitude of the alternating signal decreases. For germanium  $S_n \approx 6 \times 10^6$  cm/sec; therefore, for typical values  $E = 10^4$  v/cm,  $D_n(E) \approx 500$  cm<sup>2</sup>/sec and  $\omega = 3 \times 10^{-3}$  the limit frequency of the transmission coefficient is approx. 1,000 mc. The dimensions of the strong field and gradients of concentration in pin-structures comply with conditions of applicability of Eq. (3) and the distribution function  $f(\xi, E)$ . There are 6 references, 4 Soviet, 2 U.S. The U.S. references are: W. W. Gärtnner, Proc. I.R.E., 1957,

Card 5/6

Coefficient of Transmission of a pin-  
Transistor (Brief Communication)

77792

.30V/109-5-2-25/20

45, 10, 1392; E. Rittner, Phys. Rev., 1954, 94, 5, 1161.

SUBMITTED: August 1, 1959

Card 6/6

RYABINKIN, Yu. S., Cand Phys-Math Sci -- "The electric field  
in semiconductors with transitions according to the type of  
conductivity." Tomsk, Pub House of Tomsk U, 1961. (Min of  
Higher and Sec Spec Ed RSFSR. Tomsk Order of Labor Red  
Banner Polytech Inst im S. M. Kirov) (KL, 8-61, 228)

- 42 -

RYABINKIN, Yu.S.

Physical theory of silicon p-n-p-n structures in the cutoff  
mode. Radiotekh. i elektron. 10 no.12:2205-2211 D '65.  
(MIRA 19:1)

1. Submitted May 29, 1964.

L 12595-66 EWA(h)/EEO(k)-2/EWT(l)/T IJP(c)  
ACC NR: AP6000568

SOURCE CODE: UR/0109/65/010/012/2259/2261

47  
B

AUTHOR: Ryabinkin, Yu. S.

ORG: none

TITLE: Current gain of micro-power silicon planar transistors 11/11

SOURCE: Radiotekhnika i elektronika, v. 10, no. 12, 1965, 2259-2261

TOPIC TAGS: transistor, silicon transistor

ABSTRACT: Formulas for  $\alpha_1$  and  $\alpha_2$  in terms of a single parameter determining their dependence on current are developed for Si transistors operating with currents  $10^{-8} - 10^{-6}$  microamp. The formulas permit comparing different transistor specimens, evaluating nonlinear distortion, temperature instability, etc. The formulas show that the dependence of the above coefficients on the operating current is determined by the characteristic parameter  $I_0$ ; the latter is given by this formula:

$$I_0 = \frac{q \int N dx}{4D_{n\pi n} V_{po}} \left( \frac{kT}{qV_D} \right)^{\frac{1}{2}}. \text{ With } I_0 = 0, \text{ no recombination of majority carriers occurs}$$

Card 1/2

UDC: 621.382.333.018.14 - 181.4

Card 2/2 last

Увариков, Ю.З.

Field effect theory of semiconductors with adhesion centers.  
Radiotekh. i elektron. 11 no. 2:313-320 F '66 (MIRA 19:2)

1. Submitted October 3, 1964.

GUSCHIN, M.N.; RYABIKH, Yu.S.

Space charge limited current in a solid with field destruction of filled traps. Radiotekh. i elektron. 11 no. 2 321-325  
P '66 (MIFI 1962)

1. Submitted October 16, 1966.

L 28478-66 EWA(h)/EMT(1)

ACC NR: AP6013130

SOURCE CODE: UR/0057/86/036/004/0735/0736

41

B

AUTHOR: Ryabinkin, Yu.S.

ORG: none

TITLE: Current-voltage characteristics, mutual conductance, and anode resistance of dielectric film analog-triodes

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 4, 1966, 735-738

TOPIC TAGS: semiconductor device, semiconductor diode, semiconductor triode, semiconducting film, triode tube,

ABSTRACT: The author calculates the characteristic (anode current as a function of anode and gate potentials) of a CdS-type semiconductor film analog-triode. To simplify the calculation it is assumed that the layer of conduction electrons is of uniform thickness between the cathode and anode, although in fact it is thinner near the anode. Since the characteristic of a semiconductor film analog-diode is known, the problem of calculating the analog-triode characteristic reduces in this approximation to that of calculating the effect of the gate potential on the thickness of the conduction electron layer. This is accomplished by equating the (positive) charge induced in the electron layer, regarded as one-plate of a capacitor, by the charge on the external gate electrode to the (negative) charge lost by the electron layer owing to the reduction of its thickness. From the characteristic, expressions are derived

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L 28478-66

ACC NR: AP6013130.

for the anode resistance, the mutual conductance, and the gate cutoff potential. The theoretical characteristic is concave to the anode potential axis, as is observed. In order for the cutoff potential to be negative, i.e., in order for the device to operate at all as an analog-triode, it is necessary that the distance between the anode and cathode be less than twice the thickness of the film. Orig. art. hss: 14 formulas.

SUB CODE: 20 SUBM DATE: 03Jun88 ORIG. REF: 004 OTH REF: 006

Card 2/2 A.C.

L 46050-66 ENT(m)/ENT(t)/ETI IJP(c) JD/GD  
ACC NR: AT 6022327

SOURCE CODE: UR/0000/66/000/00C/0027/0032

AUTHOR: Ryabinkin, Yu. S.

67  
Cr/

CRG: None

TITLE: Calculating the current-voltage characteristics of a thin-film dielectric triode analog

14

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyaschennaya Dnyu radio. 22d, 1966.  
Sektsiya mikroelektroniki. Doklady. Moscow, 1966

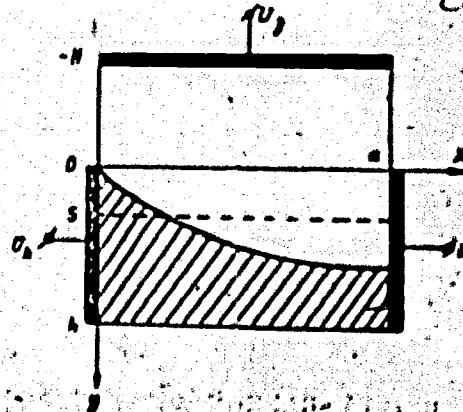
TOPIC TAGS: volt ampere characteristic, microelectronic thin film, transistor,  
electric analog, dielectric layer

ABSTRACT: An expression is derived for the current-voltage characteristics of a thin-film dielectric triode analog as a function of the physical parameters of its internal structure. The geometry corresponding to the unidimensional model of the thin-film triode analog is shown in the accompanying diagram. Here  $x=0, 0 < y < h$  is the cathode,  $x=a, 0 < y < h$  is the anode  $0 < x < a$ ,  $y = -H$  is the depletion region (control electrode or grid),  $-H < y < 0$  is the insulating film, and  $0 < y < h$  is a high-impedance semiconductive (dielectric) film where a current limited by the space charge flows from cathode to anode. The width of the triode along the z-axis perpendicular to the plane of the drawing is equal to W, and the potentials of the cathode,

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ACC NR: AT 6022327

anode and depletion region are respectively equal to, greater than or equal to, and less than or equal to zero. The region occupied by the electron beam is shaded in the diagram. An analysis of the theoretical expressions for the current-voltage characteristics of dielectric triode analogs shows that they are concave toward the anode voltage axis as distinct from the characteristics for field-effect transistors which are concave toward the current axis. Expressions are also given for the transconductance and internal resistance of the thin-film dielectric triode analog. Orig. art. has: 1 figure, 14 formulas.



SUB CODE: 09/ SUBM DATE: 05Apr66/ ORIG REF: 003/ OTH REF: 007

Card 212 LL

L 02396-67 EWT(n)/EWP(t)/ETI IJP(c) JD/CD

ACC NR: AT6022.26

SOURCE CODE: UR/0000/66/000/000/0020/0027

AUTHOR: Ryabinkin, Yu. S.

ORG: None

TITLE: Two-dimensional theory of thin-film field-effect and MOS transistors with regard to traps

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio, 22d, 1966. Sektсиya mikroelektroniki. Doklady. Moscow, 1966, 20-27

TOPIC TAGS: microelectronic thin film, transistor, volt ampere characteristic, space charge

ABSTRACT: A general expression is derived for the current-voltage characteristics of microelectronic thin-film field-effect transistors and metal-oxide-semiconductor (MOS) transistors with regard to two-dimensionality in the structure of the space charge induced by the depletion layer with and without traps and therefore applicable to any magnitude and sign of depletion layer potential. This expression is analyzed for current saturation in the cases with and without traps and it is shown that electron capture by traps reduces current magnitude by a factor of much less than 1 which is in complete agreement with the theory of thin-film diodes based on current limited by the space charge in a solid. Orig. art. has: 1 figure, 13 formulas.

SUB CODE: 09/ SUBM DATE: 05Apr66/ OTM REP: 005

Card 1/1

75  
BTI

L 27522-66 EWT(1)/T/EWA(h) IJP(c) AT

ACC NR: AF6007510

SOURCE CODE: UR/0109/66/011/002/0313/0320

AUTHOR: Ryabinkin, Yu. S.

ORG: none

TITLE: Theory of the field effect in semiconductors with traps

SOURCE: Radiotekhnika i elektronika, v. 11, no. 2, 1966, 313-320

TOPIC TAGS: semiconductor, semiconductor theory

ABSTRACT: Negligible in Ge and Si, the trap concentration reaches very high values in such materials as CdS and CdSe; hence, the existing field-effect theory is generalized, in this article, over semiconductors containing distributed trapping centers which reduce the concentration of free current carriers in the semiconductor. A principal equation of the field-effect theory for an n-semiconductor having one type

of trap is:  $\frac{d\psi}{dy} = -\frac{kT}{q_s} \sqrt{\theta(e^{a\psi} - 1) + \frac{N_t}{N_s} \ln\left(1 + \frac{N_s}{N_t} e^{a\psi}\right)} - a\psi$ , where  $l_s = \sqrt{e_s kT / 8\pi q_s N_s}$  is the Debye length. An exact solution of this equation can be obtained in the form of

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UDC: 539.293:537.228

L 27522-66

ACC NR: AP6007510

complex quadratures. Hence, approximate formulas substituting these quadratures are developed which describe the distributions of potential, electric-field strength, and free-carrier concentration. Also, formulas for the depth of field-effect penetration, thickness of conducting channel, and field-effect threshold voltage as functions of the trap concentration are developed. Orig. art. has: 1 figure and 50 formulas.

SUB CODE: 20, 09 / SUBM DATE: 03Oct64 / ORIG REF: 004 / OTH REF: 007

Card 2/2

BLG

L 27523-66 EWT(1)/ETC(f)/EWG(m)/T IJP(c)

ACC NR: AP6007511

SOURCE CODE: UR/0109/66/011/002/0321/0325

44  
CC

AUTHOR: Gushchin, M. N.; Ryabinkin, Yu. S.

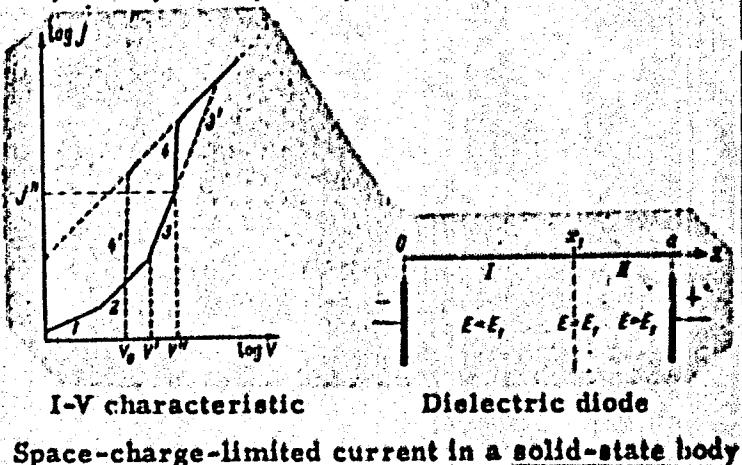
ORG: none

TITLE: Space-charge-limited current in a solid body when filled traps are depleted by field

SOURCE: Radiotekhnika i elektronika, v. 11, no. 2, 1966, 321-325

TOPIC TAGS: semiconductor,  
semiconductor theory

ABSTRACT: Connected with M. A. Lampert's work (Phys. Rev., 1956, 103, 6, 1648), this article develops I-V equations for the space-charge-limited unipolar current in a solid-state body when all traps in the near-cathode region are filled with electrons and all traps in the near-anode region are depleted by the field (see figure). The



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UDC: 539.293.011.25

L 27523-66

ACC NR: AP6007511

above equations have this form:

They describe segments 4 and 5 of  
the I-V characteristic (see figure).  
Orig. art. has: 2 figures and  
28 formulas.

$$x_1 = \frac{eE_1}{p_1} - \frac{eJ}{\mu p_1^2} \ln \left( \frac{j_{sl}}{j} + 1 \right),$$

$$V = \frac{eE_1^2}{2p_1} \left\{ 1 - 2 \frac{j}{j_{sl}} \left[ 1 - \frac{j}{j_{sl}} \ln \left( \frac{j_{sl}}{j} + 1 \right) \right] \right\} +$$

$$+ \frac{e\mu E_1^3}{3j} \left[ \left( 1 + \frac{2j}{e\mu p_1} \frac{a - x_1}{E_1^2} \right)^{\frac{3}{2}} - 1 \right],$$

$$j_{sl} = p_1 \mu E_1$$

SUB CODE: 20, 09 / SUBM DATE: 14Oct64 / ORIG REF: 001 / OTH REF: 001

Card 2/2 BLG

RYABININ, Yu. S.

Effect of the law of change of the cross-sectional area of a one-dimensional electron beam on the current intensity in the beam. Zhur. teor. fiz. 35 no. 3, 428-430 M- '63. (MHD 1963)

L 11985-65 EMT(1)/EPA(s)-2/ENG(k)/EMT(m)/EEC(t)/T/EEC(b)-2/EMP(t)/EMP(b)  
Pt-10/P1-4 IJP(c)/AFWL/SSD/ASD(c)-5/ESD(gs)/ESD(t) JD/GG/AT  
ACCESSION NR: AP4046609 8/0181/64/006/010/2989/2997

AUTHOR: Ryabinkin, Yu. S.

TITLE: Influence of the electric field intensity on the space-charge-limited current in dielectrics and semiconductors

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 2989-2997

TOPIC TAGS: carrier trapping, carrier ionization, space charge, dielectric characteristic, semiconductor characteristic, carrier mobility, electric field intensity, cadmium sulfide

ABSTRACT: The mechanism whereby carrier trapping by local centers are neutralized in semiconductors and dielectrics by an electric field is proposed, wherein a fraction of the traps, which have had a chance to capture carriers, become depleted by ionization with free carriers. The author develops a quantitative theory for the influence of such an effect on the space-charge-limited current in semi-

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ACCESSION NR: AP4046609

conductors, and determines the degree of depletion of the traps by the electric field and the effect of the field dependence of the carrier mobility on the value of the current. It is also shown that the decrease in current, which occurs at high field intensities, can be attributed to the dependence of the carrier mobility on the electric field intensity. Each of these two effects is found to be possible only after a certain critical electric field intensity is reached and is thus a specific feature of the space-charge-limited current in the solid. The experimental current-voltage characteristic of the space charge-limited current in cadmium sulfide is approximated by means of linear segments, and the factors causing the change in slope of the characteristic from segment to segment are analyzed in light of the two possible mechanisms. "In conclusion I thank M. N. Gushchin and N. M. Sorokin for a discussion of the work." Orig. art. has: 46 formulas and 1 figure.

ASSOCIATION: None

Card 2/3

L 11985-55

ACCESSION NR: AP4046609

SUBMITTED: 27Mar64

ENCL: 00

SUB CODE: EM, 68

NR REF 80V: 001

OTHER: 007

Card 3/3

RYABINKIN, Yu.S.

Theory of p-n junctions and pin structures. Izv. TPI 105:  
198-201 '60. (MIRA 16:8)

1. Predstavleno professorom doktorom A.A. Vorob'yevym.  
(Junction transistors)

RYABINKIN, Yu.S.

Electric field in a semiconductor between junctions by the conductivity type. Izv. TPI 105:202-207 '60. (MIRA 16:8)

1. Predstavleno professorom doktorom A.A. Vorob'yevym.  
(Electric fields) (Semiconductors)

RYABINIKIN, Yu.S.

Distribution of the potential, field, and concentration of current carriers in the region of a strong field in fused p - n junctions and pin-structures. Part. 1. Izv. vys. ucheb. zav., fiz. no. 1:93-103 '60. (MIRA 13:12)

1. Tomskiy politekhnicheskiy institut imeni S.M. Kirova.  
(Semiconductors)

ALEKSEYEV, G. A., prof.; RYABINKINA, A. I.

So-called primary systemic amyloidosis. Terap. arkh. 33 no. 5:80-89  
(MIRA 1:12)  
My '61.

1. Iz 3-y kafedry terapii (zav. - chlen-korrespondent AMN SSSR prof.  
I. A. Kassirskiy) TSentral'nogo instituta usovershenstvovaniya vrachey  
i patologoanatomiceskogo otdeleniya TSentral'noy klinicheskoy  
bol'ницы imeni N. A. Semashko Ministerstva putey soobshcheniya.

(AMYLOIDOSIS)

DROKIN, A.I.; SMOLIN, R.P.; RYABINKINA, L.I.

Temperature dependence of the intensity of magnetization during heating or cooling of lithium ferrite-chromite in weak magnetic fields. Fiz. tver. tela 5 no.8:2059-2064 Ag '63. (MIRA 16:9)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk.  
(Lithium chromite ferrite--Magnetic properties)

L 18518-63

EWT(1)/EWP(q)/EWT(m)/BDS AFFTC/ASD/ESD-3/IJP(C) JD

ACCESSION NR: AP3005309

S/0181/63/005/008/2059/2064

AUTHORS: Drokin, A. I.; Smolir, R. P.; Ryabinkina, L. I.65  
64

TITLE: Temperature dependence of magnetization during heating and cooling of lithium ferrite-chromite in weak magnetic fields

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2059-2064

TOPIC TAGS: magnetization, magnetic field, ferrite, Fe, Cr, Li, O, Curie point, electrical conductivity, hysteresis, compensation, demagnetization, sublattice, ceramics

ABSTRACT: The authors have investigated thermal magnetic hysteresis and electrical conductivity in the temperature interval from 20°C to the Curie point for  $\text{Li}_2\text{O} \cdot 2.5 \text{Fe}_2\text{O}_3 \cdot 2.5 \text{Cr}_2\text{O}_3$  having a point of compensation. Polycrystalline samples of this material, in the form of bars  $24 \times 3 \times 2.6$  mm, were prepared by ordinary means of ceramic technology. It was discovered that the curves of temperature dependence on magnetization show characteristic features clearly emphasizing the two-sublattice structure of the ferrite. The magnetic prehistory of the samples has a marked effect on the behavior of these curves. It is possible to obtain two points of compensation artificially. The "magnetic memory" of lithium ferrite-chromite is

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L 18548-63  
ACCESSION NR: AP3005309

preserved for a considerable range above the Curie point. It is necessary to heat samples at temperatures above 300C for complete demagnetization. No anomalies were observed in the electrical properties before or after the point of compensation during heating and cooling of the sample. Only magnetic transformations occurred at this point. Orig. art. has: 6 figures.

ASSOCIATION: Institut fiziki SO AN SSSR, Krasnoyarsk (Institute of Physics, Siberian Department, Academy of Sciences, SSSR)

SUBMITTED: 21Jan63

DATE ACQ: 06Sep63

EXCL: 00

SUB CODE: PII

NO REF SOV: 005

OTHER: 002

Card 2/2

L 26668-66 EWT(1)/EWT(m)/EWA(d)/T/EWP(t) IJP(e) JD/HW/AT

ACC NR: AP6010409

SOURCE CODE: UR/0126/66/C21/003/0423/0429

AUTHORS: Irokin, A. I.; Sudakov, N. I.; Gendelov, S. Sh.; Ryabinkina, L. I.

ORG: Institute for Physics, SO AN SSSR (Institut fiziki SO AN SSSR)

TITLE: Influence of ion diffusion during thermal and thermomagnetic treatment on the magnetostructural anisotropy in single crystals of nickel-cobalt ferrites

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 3, 1966, 423-429

TOPIC TAGS: ferrite, magnetic crystal, magnetic anisotropy, nickel compound, cobalt compound, crystal anisotropy, temperature dependence, electric conductivity, magnetic field, thermomagnetic effect, single crystal

ABSTRACT: The effect of long-term, low-temperature annealing on the temperature dependence of the first magnetostructural anisotropy constant and on electrical conductivity of single crystals of nickel-cobalt ferrites was determined. The effect of cooling the specimen in a magnetic field of 15,000 oersteds on the magnetic anisotropy in the latter was also studied. The experiments were carried out over the temperature interval of -200 to 300°C, and the results are presented graphically (see Fig. 1). It was found that the temperature dependence of  $K_1$ , the first magnetostructural constant, obeyed the relationship

$$K_1 = K_0 e^{-\alpha T}$$

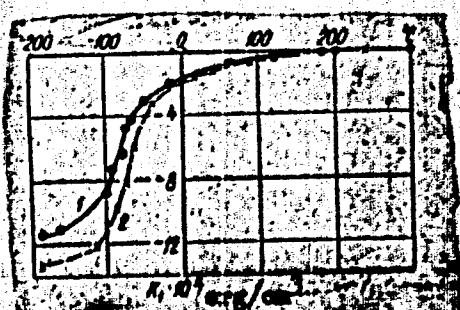
UDC: 538.245

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L 26668-66

ACC NR: AP6010409

Fig. 1. Temperature dependence of the first anisotropy constant of a nickel-cobalt ferrite: 1 - prior to annealing; 2 - after a 48-hour annealing period at 3000.



proposed by N. L. Bryukhatov and L. V. Kirenskiy (ZhETF, 1938, 8, 198), where  $K_1$  is the first magnetocrystallographic constant,  $K_{10}$  - its value at 0K,  $\alpha$  - a constant, and T - the absolute temperature. It was also found that annealing increases the absolute magnitude of the anisotropy constant and electrical resistance and that thermomagnetic treatment induces axial anisotropy. It is concluded that the observed effects are due to migration of ions in the ionic lattice. Orig. art. has: 6 graphs and 5 equations.

SUB CODE: 20/ SUBM DATE: 16Nov64/ ORIG REF: 006/ OTH REF: 009

Card 2/2 BLG

RUFAROVICH, Nikolay Dmitriyevich; RYASIN'KIY, B.Ya., red.

[Potentials for reducing the cost of ferrous metals]

Rezervy snizheniya sebestimosti chernykh metallov.  
Moskva, Metallurgizdat, 1963. 72 p. (MIRA 17:7)

OSINTSEV, Arkadiy Stepanovich; RYABIN'KIY, B.Ya., red.; KOVALIYNSKIY,  
M.A., red.izd-va; KOROVINA, N.A., tekhn. red.

[Technical progress in ferrous metallurgy] Tekhnicheskii  
progress v chernoi metallurgii. Moskva, Metallurgizdat,  
1963. 51 p. (MIRA 17:1)

RYABIN'KIY, Bronislav Yakovlevich

Planirovaniye i ekonomika metallurgicheskikh zavodov. 2nd. 2..

perer. i dop. Moskva, Metallurgizdat, 1960.

736 p. tables.

RYABIN'KIY, Bronislav Yakovlevich; ADARYUKOV, G.I., inzh., retsenzent;  
BERLYAND, S.S., inzh., retsenzent; GERASIMENKO, V.A., inzh.,  
retsenzent; GRUDSKIY, V.A., inzh., retsenzent; DASHEVSKIY,  
Ye.B., inzh., retsenzent; KARPMAN, Ya.I., inzh., retsenzent;  
KOROLEV, M.N., inzh., retsenzent; KORSAKOV, A.A., inzh.,  
retsenzent; LISENKO, T.P., inzh., retsenzent; PEXILIS, I.B.,  
inzh., retsenzent; REVYAKIN, A.A., inzh., retsenzent;  
ROMANOVICH, N.D., inzh., retsenzent; FILIPPOV, S.M., inzh.,  
retsenzent; BRUSHTEYN, A.I., red.izd-va; DOBUZHINSKAYA, L.V.,  
tekhn. red.

[Planning and the economics of metallurgical plants] Planirovaniye i ekonomika metallurgicheskikh zavodov. Izd.3., perer. i dop. Moskva, Metallurgizdat, 1963. 754 p. (MIRA 16:4)  
(Steel industry--Management)

RYABINOV, M.G., inzh. (Leningrad); TATIYEVSKIY, V.M., inzh. (Leningrad);  
KHOROMETSKIY, V.A., inzh. (Leningrad)

Technology of the substitution of graphite lubrication.  
Put' 1 put. khoz. 9 no.3:19-20 '65. (MIRA 18:6)

"APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001446310002-0

RYABINOV, M.G., inzh. (Leningrad); TATIYEVEKII, V.M., inzh. (Leningrad);  
KHOROMETSKIY, V.A., inzh. (Leningrad)

Use of a tamper in the current track maintenance. Put' i put.khoz.  
9 no.5:29-30 '65. (MIRA 18:5)

APPROVED FOR RELEASE: 07/19/2001

CIA-RDP86-00513R001446310002-0"

RYABINOV, M.G. (Leningrad)

Establishing work norms in the current track maintenance.  
Zhel. dor. transp. 47 no. 6:75-77 Je '65.

(MIRA 18:6)

1. Nachal'nik Normativno-instruktorskoy stantsii Glavnego  
upravleniya puti i srozhcheniy Ministerstva putey sov-  
eshchineniya.

RYABINOV, M. R. (Leningrad); VOLYNSKIY, R. F., inzh. (Leningrad)

Mechanized laying of switches on a reinforced concrete foundation. Put' i put. khoz. 6 no.10:29-31 '62.  
(MIRA 15:10)

(Railroads—Switches)  
(Railroads—Tracklaying machinery)

11800  
51310

(2204, 2408, 1607)  
(1708, 1273, 2319)

25308

S/080/61/034/002/009/025  
A057/A129

AUTHORS: Shatscova, S.A., Fel'dman, Yu.A., Borodavko, I.B.,  
Ryabtseva, A.Ye.

TITLE: Effect of ultrasonic waves on processes of electroplating of  
metals from cyanide electrolytes

PERIODICAL: Zhurnal Prikladnoy Khimii, v 34, no 2, 1961, 331-339

TEXT: Conditions of an intensification of copper, brass, and silver  
electroplating processes in cyanide electrolytes were experimentally in-  
vestigated. Relations between principal parameters of the electroplating  
process in an acoustic field were studied and the results obtained with  
and without ultrasonic waves were compared. Few of the papers recently  
published concerning the effect of ultrasonic waves in electroplating deal  
with cyanide electrolytes, and in several cases no quantitative comparisons  
are made. However, the positive effect of ultrasonic waves on the process

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Effect of ultrasonic waves ...

25/03  
S/030/61/034/002/006/025  
4057/A129

was observed and thus more precise investigations on this question were of interest. In order to compare results obtained with and without ultrasonic waves the present experiments were carried out in the same tanks and under the same conditions. Two types of tanks were used: UZB (UZV), a welded metal tank (10-15 l) with polyvinyl-covered side walls containing a magnetostriction transformer for about 19 kc/s and a capacity of 2-4 kva (Ref 9: Yu.A. Kitaygorodskiy, "Primeneniye ul'trazvuka v tekhnologii mashinostroyeniya" ("Application of ultrasonic waves in technology of mechanical engineering"), Izd. zhurn. tekhniki (Edited by the House of technology), M., 113 (1958)), and AVDI-1 (AVDI-1) type, a 10-l plastic tank with working frequencies of 16 kc/s and a capacity of 0.4-0.5 kva (Ref 10: Yu.A. Fel'dman et al, "Perevod nauchno-tekhn. i priliv. opyt" ("Advanced scientific, technical and industrial practice"), TsITIEIN GNTK SSSR, M., (1960)). For the UZV tank an industrial generator of the YJF-10 (UZO-10) type was used, and for the AVDI-1 tank a FSYK-2 (GZUK-2) experimental generator. The experiments were carried out at 16 and 20 kilohertz, and the current yield was determined by a coulomb-meter. The effect of ultra-

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25388

S/080/61/034/002/008/025  
A057/A129

## Effect of ultrasonic waves ...

sonic waves on copper plating was investigated in 3 electrolytes (Tab. 1) and it was observed that maximum current densities can be increased 5-6 times by the effect of sound vibrations (Fig 1). The rate of copper deposition is much greater when ultrasonic waves are applied and current yield increases considerably. Thus in electrolyte no. 3 at a current density 20 amp/dm<sup>2</sup> and 40°C the rate of copper deposition is 7-8 μ/min (at 50°C it is 11 μ/min), i.e., 15-20 times greater than in the existing practice of copper-plating from cyanide electrolytes. Comparison of the investigated electrolytes indicates that the best ultrasonic effect is obtained in electrolytes containing 80 g copper cyanide per liter. No noticeable deterioration of dispersion capacity due to the effect of ultrasonic waves was observed. The sound vibration effect on brass electroplating was studied in two electrolytes (Tab. 2) and it was determined that current density can be increased from 0.1-0.5 amp/dm<sup>2</sup> to 2-3 amp/dm<sup>2</sup> to obtain glossy deposits, and to 3-20 amp/dm<sup>2</sup> for pasty deposits. With increasing current density the rate of deposition increases up to a certain limit which depends on the content of free NaCN. At optimum content of

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S/080/61/034/002/008/025  
A057/4129

## Effect of ultrasonic waves ...

free NaCN (4-6 g/l) and 40°C the rate of deposition is at 2-3 amp/dm<sup>2</sup> 0.5 μ/min for shiny brass and at 15-20 amp/dm<sup>2</sup> 2-2.5 μ/min for dull brass. Processes occurring above 2 amp/dm<sup>2</sup> current density are of theoretical and practical interest and have to be studied in further experiments. Current yield decreases with increasing current density and NaCN content, but the rate of deposition can be increased up to 120-150 μ/hr, i.e., 25-30 times higher than in existing electroplating. The effect of sound vibrations on cathodic polarization is the same as in copper plating, i.e., polarization decreases and the potential shifts towards more positive values. Increasing temperature, higher current density, and ultrasonic waves effect a change in composition of the deposited brass. Apparently ultrasonic waves have a different effect on deposition of copper and of zinc. The composition of electrolytes used in silver-plating experiments is presented in Tab. 3. With electrolytes containing about 40 g silver per liter current density can be increased to 10-15 amp/dm<sup>2</sup> by means of ultrasonic waves and the rate of deposition is 6-7 μ/min. The latter depends linearly on current density. In distinction from copper- and brass-electroplating, no noticeable effect of temperature was observed in silver-plating.

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25388

8/080/61/034/002/008/025  
4057/A129

Effect of ultrasonic waves ...

The present authors point out that the mechanism of the effect of ultrasonic waves on electroplating, especially of alloys, is of interest for further investigations. There are 11 figures, 3 tables and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The two English-language publications read as follows: Fishlock, Metal Industry, 93, 109 (1958), St. R. Rich, Plating, 42, 11 (1955).

SUBMITTED: June 18, 1960

Card 5/8

PRIYMAK, Ivan Andreyevich, prof., doktor tekhn.nauk; RYABIN'KIV,  
Bronialav Yakovlevich, dotsent, kand.ekon.nauk; MOSKOVICH,  
Isay Yevseyevich, dotsent, kand.tekhn.nauk; AVRUTSKAYA,  
R.F., red.izd-va; ISLEN'T'DINA, P.G., tekhn.red.

[Industrial organization in metallurgy] Organizatsiya metallurgi-  
cheskogo proizvodstva. Pod nauchn.red. I.A.Priimaka. Izd.2.,  
dop. i perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi  
i tsvetnoi metallurgii, 1960. 501 p.

(MIRA 14:1)

(Metallurgical plants)  
(Industrial organization)

RYABIK'KIY, B. ✓

Ya.

Organizatsiya metallurgicheskogo proizvodstva (by)  
I.A. Friymak, B. Ya. Ryabin'kiy (i) Yu. Moshkevich.  
Izd. 2., dop. i perer. Moscow, Metallurgizdat, 1960.  
501 p. charts, diagrs., graphs, tables.  
Bibliographical footnotes.

RYABINOK, Aleksey Gerasimovich; YEMEL'YANOVA, Ye.V., red.

[Electrochemical dimensional machining of metals and alloys]  
Elektrokhimicheskain razmernaina obrabotka metallov i spalov  
Leningrad, Lenizdat, 1965. 156 p. (MIRA 18:9)

MITIN, Mikhail Nikolayevich. MELKONYAN, Rafael' Vaginovich;  
YABLOK, A.G., red.

[Electrochemical dimensional machining of diesel engine  
parts] Elektrokhimicheskaya razmernaya obrabotka detalei  
dizel'noi apparatury. Leningrad, 1964. 16 p.  
(MIRA 17:9)

MITIN, Mikhail Nikolayevich; MELIKYAN, Rafael' Vagabovich;  
RYALINOV, A.G., red.

[Electrochemical dimensional machining of diesel engine  
parts] Elektrokhimicheskaya razmernaya obrabotka detalей  
dizel'noi apparatury. Leningrad, 1944. 16 p.  
(NIIKh-1710)

*RYBINSKAYA, M. I.*

*15  
RE4f*

Synthesis of 4-ethyl-*t*-azadethiophenoxolininium salt.  
 N. N. Nesmeyanov, M. I. Rybinskaya, and N. K. Br'yan  
 (Inst. Hetero-Org. Compds., Academy of Moscow), Dokl. Akad. Nauk S.S.R., 113, 347-8 (1957); cf. C.A. 49,  
 4401b.—Heating 0.11 mole 2-aminopyridine and 0.1 mole  
 $\text{RCOCH}_2\text{Cl}(\text{OR}')$  in ampul 4-6 hrs. at 140° gave the  
 following 3-acylanilins of 2-aminopyridine:  $\text{3-C}_6\text{H}_4\text{N}^+ \text{NHCH}_2\text{Ac}$  (I), m.p. 121°, 61.1% from  $\text{AcCH}_2\text{CH}(\text{OMe})_2$ ,  
 or 19.4% from  $\text{AcCH}_2\text{CH}(\text{OBz})_2$ ; 55.1%  $\text{3-C}_6\text{H}_4\text{N}^+ \text{CH}_2\text{CH}(\text{COEt})_2$ , m. 90.5-7°; 65.7%  $\text{3-C}_6\text{H}_4\text{N}^+ \text{CH}_2\text{CH}(\text{CO}_2\text{Me})_2$ , m. 86-8° (from  $\text{PrCOCH}_2\text{CH}(\text{OMe})_2$ ), b.p. 81° (1 mm.  
 1.4206); 60.0% 2- $\text{C}_6\text{H}_4\text{N}^+ \text{CH}_2\text{CH}_2\text{Br}$ , m. 127-8° (from  
 $\text{BrCH}_2\text{CH}(\text{OMe})_2$ , b.p. 134-5°, n<sub>D</sub><sup>25</sup> 1.5386). To 1 g. I in  
 1.2 ml. concd. HBr was added 1.5 ml. EtOH, followed by  
 $\text{Et}_2\text{O}$  to yield 75.8% 4-methyl-*t*-azadethiophenoxolininium  
 bromide (Ia), decomp. 204-5° (from EtOID); similarly was  
 prep'd. the perchlorate (II), decomp. 220° (from 50% MeOH).  
 Similarly were prep'd.: 64.8% 4-ethyl-*t*-azadethiophenoxolininium  
 nitrate bromide, m. 210-12° (from RbOH-Et<sub>2</sub>O); perchlorate  
 m. 169-70° (from MeOH); 64.2% 4-propyl-*t*-azadethiophenoxolininium  
 perchlorate, m. 145°. II in aq. soln. treated  
 with NaOH and shaken with  $\text{C}_6\text{H}_6$  gave from the org. la (or  
 the original acylanil, m. 119°). In hydrogenated in  $\text{EtOH}$   
 over Pt black gave 4-methyl-*t*-azadethiophenoxolininium *h*Br  
 salt, converted for identification into the picrate, m. 117°.  
 The 1-azadethiophenoxolinium ion shows 6 absorption  
 max. at 330, 318, 312, 304, 274 and 228 m<sub>m</sub>. G. M. —

Kyivskaya, M. I.

20-1-25/44

AUTHORS: Nesmeyanov, A. N., Academician and  
Rybinskaya, M. I.

TITLE: The Synthesis of 2-Substituted Dehydroquinolysinium Salts (Sintez  
2-zameshchennykh soley degidrokhinoliziniya).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 1, pp. 93-96 (USSR).

ABSTRACT: Together with N. K. Kochetkov the authors reported in several papers on the use of  $\beta$ -chlorovinylketones as an extremely satisfactory starting material for the synthesis of various 5- and 6-member heterocyclic systems. In the present work a lithium-derivative of  $\alpha$ -picoline was used in the reaction with acyl-acetaldehyde-acetals which are easily obtained from  $\beta$ -chlorovinylketones (according to the method by the authors with Kochetkov).  $\alpha$ -picolyl-lithium by a reaction with the acyl-acetal-aldehyde-dimethyl-acetals in ether yields only little soluble lithium alcoholates of alcohol II. These latter can be filtered away and washed with ether, whereby they are liberated from admixtures of the initial substances; then they are decomposed with water. The alcohols I - II developing from them could not be isolated as free substances. They could, however, be cyclated (by boiling with an excess of concentrated bromo-hydracid), whereby

Card 1/3

The Synthesis of 2-Substituted Dehydroquinolysinium Salts.

20-1-29/44

salts of 2-oxy-2methyl- and 2-oxy-2-phenyl-quinolysinium (1 H, 2H) (III.) were obtained. They are well soluble in water and rapidly decolorize the potassium permanganate solution. The corresponding salt for R = C<sub>3</sub>H<sub>7</sub> was used without purification in the next stage, as it proved not to be crystallizable. The last stage, i. e. dehydration by boiling with acetic anhydride, takes place extremely easily. The yield(in relation to the initial acetal)was 20-30%. This method made it possible to produce to hitherto unknown salts mentioned in the title in a simple manner. The properties of the 2-substituted bromides, of the perchlorate and picrate of 2-phenyldehydroquinolysinium are described. The resulting salts do not decolorize the potassium permanganate solution and thus do not contain any non-aromatic double bonds. 2-methyl-dehydroquinolysinium-bromide on hydration over platinum black absorbs 5 Mol hydrogen, which indicates the presence of 5 double bonds in the condensed nucleus. The absorption spectrum of the latter substance, taken in the ultraviolet range, is in good agreement with that by Bockelheide & Gall for the dehydroquinolysinium-ion. It follows an experimental part with the usual data.

There are 9 references, 3 of which are Slavic.

Card 2/3

The Synthesis of 2-Substituted Dehydroquinolysinium Salts. 20-1-25/44

ASSOCIATION: Institute for Elementary-Organic Compounds, AN USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR).

SUBMITTES: April 24, 1957.

AVAILABLE: Library of Congress.

Card 3/3

ANTONOVSKIY, V.I.; MAKALINS, B.I.; RYABINIKAYA, N.B.; SOKOLOVA, L.V.

Comparative tests of reactors for liquid phase oxidation of  
hydrocarbons. Izv. prikl. khim. 37 no.11:3153-3156 (1964)  
(MIRA 1861)

RYABINSKIY, B., kapitan dal'nego plavaniya

Standardize the norms controlling the responsibility of river  
and ocean steamboat lines. Rech. transp. 21 no.5:15-16 My  
'62. (MIRA 15:5)

(Steamboat lines)

RYABINKIY, Ye.M. [Riabynkyi, YE.M.], insb.

Safety in the operation of the VET-200 heater. Mekh. sil'.  
(MIRA 1':1)  
hosp. 14 no.9:24 S '63.

USSR / Morphology of Man and Animals. Nervous System.

S-1

Abs Jour : Ref Zhur - Biol., No 5, 1958, № 21684

Author : Ryabkov, M. I.

Inst : Not given

Title : A Contribution to the Question of Peripheral Connections  
Between the Phrenic Nerves.

Orig Pub : V sb.: Probl. morfol. nervn. sistemy. L., Medgiz, 1956, 131-  
137.

Abstract : By preparing 60 human cadavers according to V. P. Vorobyev's  
method, it was determined that peripheral branches of the  
right and left phrenic nerves are located within the diaphragm  
muscle and in the diaphragmatic peritoneum. Anastomoses bet-  
ween the right and left phrenic nerves are in the thoracic  
portion of the diaphragm and near the centrum tendineum. The  
ganglia are found, mainly, along a course of the right  
diaphragmatic plexus and in the area of anastomoses between  
the right and left phrenic nerves.

Card 1/1

10

SOBOLEVA, N.I., zavednyushchiy (Moscow); RYABINKINA, A.I., zavednyushchiy (Moscow);  
KALUGINA, M.N., glavnny vrach; LEONT'YEV, Y.A., glavnny vrach.

Etiology and pathogenesis of Taratinov's disease; eosinophilic granuloma of  
the bone or benign medullary reticuloma with eosinophilia. Arkh.pat. 15 no. 8;  
37-46 Jl-Ag '53. (MIRA 6:11)

1. Patologoanatomiceskoye otdeleniye Detskoy klinicheskoy bol'nitsy im.prof.  
V.P.Filatova (for Soboleva).
2. Detskaya klinicheskaya bol'nitsa im. prof.  
V.P.Filatova (for Kalugina).
3. Patologoanatomiceskoye otdeleniye TSentral'-  
noy klinicheskoy bol'nitsy im. N.A.Semashko Ministerstva putey soobshcheniya  
(for Ryabinkina).
4. TSentral'naya klinicheskaya bol'nitsa im. N.A.Semashko  
Ministerstva putey soobshcheniya (for Leont'yev).

(Bones--Diseases) (Tumors)

DROKIN, A.I.; SUDAKOV, N.I.; GENDELEV, S.Sh.; IZOTOVA, T.P.; RYABINKINA, L.I.

Temperature dependence of the first anisotropy constant in  
single crystals of iron-nickel ferrites. Fiz. met. i  
metalloved. 17 no.5:684-688 My '64. (MIFI 17:9)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

FALUNIN, A.F.; RYABINKINA, Y.O.I.

Four-wire through connections in existing exchanges. Elektrosviaz'  
10 no. 3:47-56 Mr '56.  
(Telephone) (M2A 9:7)

RYABIN'KIY, B. Ya.

324

Granovskiy, Grigoriy Moiseyevich

Balans metallurgicheskogo zavoda (Balance Sheet of the Metallurgical Plant) Moscow, Metallurgizdat, 1957. 184 p. 3,000 copies printed.

Ed.: Ryabin'kiy, B. Ya.; Ed. of Publishing House: Khutorskaya, Ye.S.; Tech. Ed.: Mikhaylova, V.V.

PURPOSE: This book is aimed at the administrative and bookkeeping personnel of the metallurgical industry. It is suggested that this book may also be of value to like personnel in other industries, as well as to VUZ and technical school students.

COVERAGE: This book contains basic bookkeeping information necessary to analyze the balance sheets of metallurgical and other plants. For details see T/C. No personalities are mentioned.

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6/30/58

Card 5/5

Ryabin'kiy, B.Ya.

153-11-1/19

AUTHOR: Ryabin'kiy, B.Ya., Candidate of Economic Science

TITLE: Development of the Iron and Steel Industry in the USSR  
During 40 Years of Soviet Power (Razvitiye chernoy metallurgii SSSR za 40 let Sovetskoy vlasti)

PERIODICAL: Stal', 1957, no.11, pp. 961 - 964 (USSR)

ABSTRACT: A brief outline of the development in the iron and steel industry and particularly in the output of pig iron, steel and rolled products is given.

AVAILABLE: Library of Congress

Car 1/1

*Ryabin'kiy, B.Ya.*

RYABIN'KIY, B.Ya., kand.ekon.nauk

Growth of iron and steel industries in the U.S.S.R. during 40  
years of Soviet government. Stal' 17 no.11:961-964 в '57.  
(MIRA 10:12)

(Iron industry)

RYABIN'KIY, Bronislav Yakovlevich; BERLYAND, S.S., inzh., retsenzent; OZRA-SIMENKO, V.F., inzh., retsenzent; GRUDSKIY, Ye.B., inzh., retsenzent; DASHLEVSKIY, Ya.I., inzh., retsenzent; DVORIN, S.S., inzh., retsenzent; KAMALOV, O.M., inzh., retsenzent; KARPMAN, M.A., inzh., retsenzent; KASHCHENKO, D.S., inzh., retsenzent; KOROLEV, M.N., inzh., retsenzent; KORSAKOV, A.A., inzh., retsenzent; LISSNKO, T.P., inzh., retsenzent; PEKELIS, I.B., inzh., retsenzent; REVYAKIN, A.A., inzh., retsenzent; ROMANOVICH, N.D., inzh., retsenzent; PRIYMAK, I.A., prof., red.; AVRUTINSKAYA, R.Y., red.izd-va; ISLAM'TYBYA, P.O., tekhn.red.

[Planning and economics of metallurgical plants] Planirovaniye i ekonomika metallurgicheskikh zavodov. Izd.2., dop. i perer. Moskva, Gos. nauchno-tehn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 736 p.

(MIRA 13:2)

(Metallurgical plants)

SHARAPAN, Boris Savel'yevich, dotsent [deceased]. Prinimali uchastiye:  
FEL'DMAN, Ya.I.; GRUDSKIY, Ye.B.; PEKELIS, I.B., RYABIN'KIY,  
B.Ya., red.; KHUTORSKAYA, Ye.S., red.izd-vs; ISLEN'TYEVA, P.G.,  
tekhn.red.

[Analysis of the economic aspects of a metallurgical plant  
operations] Analiz khozisistvennoi deiatel'nosti metallurgi-  
cheskogo zavoda. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po  
chernoi i tsvetnoi metallurgii, 1960. 259 p. (MIRA 13:4)

1. Dnepropetrovskiy metallurgicheskiy institut (for Sharapan).  
(Metallurgical plants--Accounting)

PHASE I BOOK EXPLOITATION

SOV/5360

Priymak, Ivan Andreyevich, Bronislav Yakovlevich Ryabin'kiy, and Issay Yavseyevich Moshkevich

Organizatsiya metallurgicheskogo proizvodstva (The Organization of Production in Metallurgical Plants) 2d ed., enl. and rev. Moscow, Metallurgizdat, 1960. 501 p. 6,000 copies printed.

Ed. (Title page): I.A. Priymak; Ed. of Publishing House: R.P. Avrutskaya; Tech. Ed.: P.G. Isalent'yeva.

PURPOSE: This textbook is intended for students in metallurgical institutes and teknikums, and may also be used by technical personnel in metallurgical plants.

COVERAGE: Principle of organization and production planning in basic and auxiliary shops of a metallurgical plant are stated. Problems relating to the organization of manufacturing processes, engineering standardization, planning and coordination of operations and wages, production planning, materials supply, and production costs, are reviewed. Also considered are methods for developing a financial plan, and for reporting and analyzing the economic and financial activity of a metallurgical plant. No personalities are mentioned. There are no references.

Card 1/13

RYABIN'KIY, B. YA.

137-58-1-660

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 102 (USSR)

AUTHOR: Ryabin'kiy, B. Ya.

TITLE: Means for Reducing the Cost of Rolled Products (Puti snizheniya sebestoimosti prokata)

PERIODICAL: Tr. Nauchno-tekhnik. o-va chernoy metallurgii, 1956, Vol 10, pp 264-268

ABSTRACT: The principal means of reducing the cost of rolled products are: a) Reduction of unit consumption of blooms and billets per ton of rolled products by pronounced reduction in metal loss due to waste, rejects, and spoilage, by organizing the rolling of sheet steel in accordance with a definite layout, providing rolling shops with blooms and billets of definite dimensions, reduction in defective portions of the bloom, improvement in technological discipline, etc.; b) improved utilization of productive capacities of rolling mills, increase in output of rolled metal; c) reduced consumption of fuel and electric power by improving the heat control of the operation of heating furnaces, reduction in no-load operation and idling of mills, cranes, etc.; d) increasing labor productivity in the product finishing units;

Card 1/2

137-58-1-660

Means for Reducing the Cost of Rolled Products

e) reduction of expenses on running repairs and increase in life of equipment, proper operations thereof, and increase in length of time between overhauls.

V.D.

1. Rolling mills—Costs    2. Rolling mills—Production    3. Fuels—Reduction

Card 2/2

RYABIN'KIY, B.Ya.

RASTORGUYEV, Nikolay Profir'yevich; RYABIN'KIY, B.Ya., red.; AVRUTSKAYA, R.F.,  
red.izd-va; VAYNSHTEYN, Ye.B., tekhn.red.

[Accounting and computation in iron and steel industry] Bukhgalter-  
skiy uchet i kai'kuliatel'stvo v chernoi metallurgii. Izd. 2..  
izmenennoe i dop. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi  
i tsvetnoi metallurgii, 1958. 386 p. (MIRA 11:7)

(Iron industry--Accounting)  
(Steel industry--Accounting)

Ryabin'kiy, B. Ya.

PHASE I BOOK EXPLOITATION

430

Voprosy ekonomiki predpriyatiy chernoy metallurgii SSSR  
(Economic Problems in Plants of the Iron and Steel  
Industry of the USSR) Moscow, Metallurgizdat, 1956.  
288 p. 12,000 copies printed.

Eds.: Gorelik, I.G. and Ryabin'kiy, B.Ya.; Ed. of Publishing  
House: Khutorskaya, Ye. S.; Tech. Ed.: Karasev, A.I.,  
Reviewers: Gorelik, I.G. and Katshev, V.L.

PURPOSE: This book was written in connection with the program  
on the economics of socialist industry, which was approved  
by the Department of Soviet Economics of the Higher Party  
School under the Central Committee of the Communist Party  
of the Soviet Union. It is intended to serve as a textbook  
for students attending seminars dealing with the economic  
problems of ferrous metallurgy.

Card 1/15

Economic problems in Plants (Cont.)

430

COVERAGE: The following aspects of the iron and steel industry are reviewed: the administrative system, intra-plant planning and the overall operational plan, fixed and working assets, technical progress, the organization of production, labor productivity and wages, personnel, the cost of production, economic accountability (khozraschet), finances, and capital construction. Chapters 1 and 8 are written by A.Y. Leskov, Chapter 2 by D.N. Potapov, Chapters 3, 4, 5, and 6 by B.Ya. Ryabin'kim, Chapter 7 by I.G. Pashko, Chapters 9 and 11 by I.A. Priymak, Chapter 10 by K.I. Voronov, Chapter 12 by L.A. Bergauz, Chapter 13 by N.D. Romanovich, Chapter 14 by O.M. Kamalov, Chapter 15 by D.A. Vetrinskiy, Chapter 16 by I.B. Pekelis, Chapter 17 by G.M. Granovskiy, Chapter 18 by V.D. Zemlyanskiy, Chapter 19 by D.L. Mayzel's. All the authors are officials of the Ministry of Ferrous Metallurgy. There are no references.

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## Economic Problems in Plants (Cont.)

430

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- 4. Standard planning
- 5. Organizing capital construction in plants of the iron and steel industry
- 6. Organization of payments for capital construction

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2 September 1958

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RIABINKII, B. Ya.

Riabinkii, B. IA.

Production planning in a metallurgical plant. Accepted as a textbook  
for the metallurgical technicums. (Planirovaniye proizvodstva na metallur-  
gicheskom zavode. Dopushcheno v kachestve uchebnika dlia metallur-  
gicheskikh tekhnikumov.) 555 pp.

Moscow

State Scientific Technological Publishing House for Black and Color  
Metallurgy.

1950

Available: Library of Congress

Source: List of Monthly Russian Accessions  
Vol. 4, No. 9, p. 571

Call No: TN673.148

Subject: Metallurgical plants. 2. Mineral Industries-Russia.

ADIROVICH, M.I.; RYABINKIN, Yu.S.; TIKHO, K.V.

Equilibrium distribution of field potential and of concentration of  
charge carriers on fused-in junctions. Zhur. tekh. fiz. 28 no.1:55-  
66 Ja '58. (MIRA 11:3)

(Semiconductors) (Electrons)

RYABINKINA, A.I., (Moskva)

Morphology of pulmonary tuberculosis according to observations of  
sections. Arkh.pat. 18 no.4:109-110 '56 (MIMA 11:10)

1. Iz patologomatomicheskogo otdeleniya (zav. - A.I. Ryabinkina)  
Tsentral'noy klinicheskoy bol'nitay imeni Semashko Ministerstva putey  
soobshcheniya.

(TUBERCULOSIS, PULMONARY, pathol.  
distribution of lesions in lungs & other organs & incidence,  
determ. by resection of endovera. (Rus))

PRIYMAK, Ivan Andreyevich; RYABIN'KIY, Bronislav Yakovlevich; MOSKOVICH,  
Isay Yevseyevich; BAENYY, N.P., redaktor; PINEGIN, redaktor  
izdatel'stva; SHPAX, Ye.G. tekhnicheskiy redaktor

[The organization of steel industry] Organizatsiya metallurgicheskogo  
proizvodstva. Pod nauchnoi red. I.A.Priimaka. Moskva, Gos. nauchno-  
tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 438 p.  
(Steel industry) (MIRA 9:8)